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(12) UK Patent Application (19) GB (11) 2 344 337 (13) A

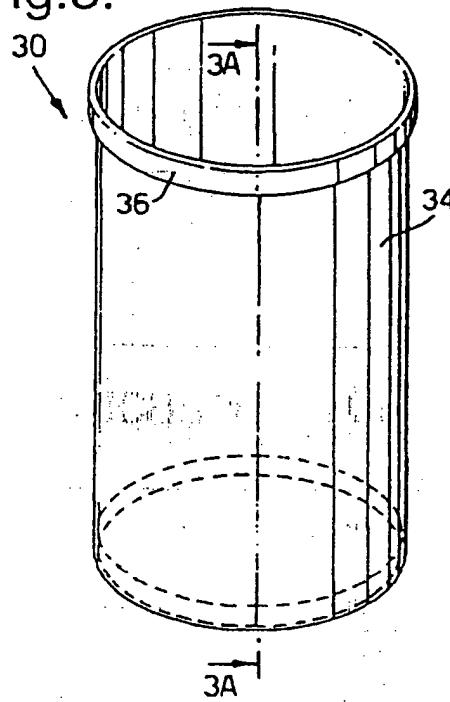
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(54) Abstract Title
Carton having a rim

(57) A carton having a side wall 34 and a base is manufactured by a method which involves the steps of curling the upper edge of the side wall 34 around to form a bead and then compressing the bead to flatten it against the side wall to form a rim 36. The carton is preferably formed from a rectangular or square piece of card with a seam formed by adhering opposite edges and closure means in the form of a sealing membrane may be provided. A plastic plug may also be provided.

Fig.3.



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.
The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.
The print reflects an assignment of the application under the provisions of Section 30 of the Patents Act 1977.

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Fig.3A.

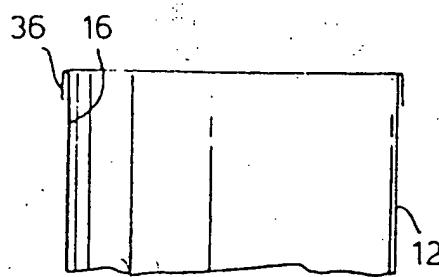
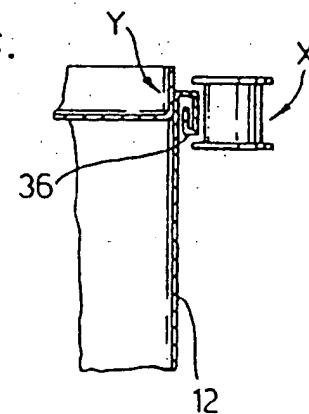
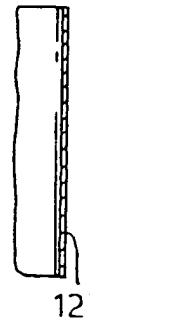


Fig.4d.

Fig.4a. Fig.4b. Fig.4c.



Existing carton "cup" technology, wherein a cup-type carton can be manufactured from two pieces of coated board, one of which forms the base of the cup, the other forming the side walls thereof by being wrapped around the base such that a pair of edges overlap and may be sealed together to form a seam, can be used to manufacture tubular containers which are markedly less expensive than those currently used, but until this time, such technology has not been successful in that the rigidity of such a carton would require to be enhanced by the application of a metal hoop to the uppermost edges of the side wall if repeated opening and re-closing of the carton was a functional requirement thereof. The cost of a carton provided with such reinforcement is likely to be only marginally different to that of a spirally wound tube as described above.

In an attempt to mitigate the problems of rigidity, the uppermost edge of the carton is commonly provided with a bead by curling the material of the side wall outwardly of the carton and back underneath itself. Although beads formed around the upper edge of cartons do enhance the rigidity of the walls of the cartons, this type of construction is unsuitable for carton which are required to have an open and re-close facility.

It is an object of the invention to provide a carton with an open and re-close facility which is of sufficient rigidity to withstand repeated open and re-close actions without disintegrating.

According to the invention there is provided a method for manufacturing a carton, said carton comprising a base and a side wall surrounding said base defining the interior of said carton, said side wall having an upper edge, said method comprising the steps of curling the upper edge of the side wall to form a bead therearound, and compressing said bead to flatten same against the side wall to form a rim.

The facility of the novel cartons for insertion of a plug in the shallow cavity defined by the side walls and the upper surface of the sealing membrane represents a further advantage in that the overall rigidity of the carton can be improved. The number of cartons of products which are spoiled during transportation will be accordingly reduced.

A further valuable advantage of cartons according to the invention is their inherent stacking efficiency as compared to cartons provided with conventional curled uncompressed beads. The containment of products in such cartons has been previously considered, but the effective increase in the dimensions of the carton at one end as a result of the curled bead either reduced their packing efficiency, or alternatively necessitated the packing of cartons in alternate fashion such that no two cartons were packed with their beads adjacent. The novel cartons do not suffer from this disadvantage or does not suffer to the same extent because the compression of the bead to form a rim around the edge of the carton does not substantially increase the effective dimensions of the carton.

A specific embodiment of the invention is now provided by way of example with reference to the accompanying diagrams wherein:

Figure 1 shows a perspective view of a cylindrical carton,

Figure 2 shows the carton of Figure 1 provided with a bead,

Figure 2A shows a section through the carton of Figure 2,

Figure 3 shows the carton of Figure 2 after compression of said bead to form a rim,

never practised in the art and therefore not described here. It is to be noted that the working of the board material of the side wall in the formation of the bead weakens the seam in this region with regard to gaseous ingress and egress, and this weakness has heretofore precluded seamed cartons from being used to contain dry products without first providing said products in a sealed bag.

Figures 3 and 3A show the carton of Figures 2, 2A as subjected to an additional bead compression as provided by the invention and as shown in Fig. 4(d). The compression is effected externally of the carton by a suitably shaped compression member X shown in Fig. 4(d) which is urged toward and reacts against a suitably shaped reaction member Y disposed within the carton at the relevant compression time such that the bead of the carton is compressed between said members X and Y. The degree of compression is such that the bead is flattened in this example to an extent dictated by the profiling of the member X against itself and the side wall 34 to form a rim 36 around the uppermost edge of the side wall 34, the result of which is shown in Figure 3A and Fig. 4(d). It is to be mentioned that it is preferable but not essential that the degree of curling of the bead is such that the rim is the twice the thickness of the side wall as shown in the Figure. The carton thus described has a far superior stacking efficiency than that of cartons produced by convention cup-technology.

Even prior to the application of the membrane as according to the invention, the rigidity of the carton construction of Figure 3 is improved, simply by compressing the bead and forming a rim as described, and this advantage has heretofore not been appreciated.

A shallow cavity 50 in the upper portion of the carton results as a result of the particular application of the membrane. Said cavity may receive a plug. The plug has a narrow lip the width of which is

Claims

1. A method for manufacturing a carton, the carton comprising a base and a side wall surrounding the base defining the interior of the carton, said side wall having an upper edge, the method comprising the steps of curling said upper edge of said side wall to form a bead therearound and compressing said bead to flatten same against said side wall to form a rim.
2. A method as claimed in claim 1 which comprises the step of forming a seam in the side wall, said seam extending in a longitudinal direction.
3. A method as claimed in claim 1 or claim 2 wherein said side wall is formed from a single rectangular or square piece of card.
4. A method as claimed in claim 3 wherein said seam is formed by adhering opposing edges of the piece of card to one another.
5. A method as claimed in any of claims 1 to 4 wherein said bead is compressed against the side wall in such a fashion that the rim formed thereby lies substantially flat against the side wall.
6. A method as claimed in any of claims 1 to 5 wherein during the step of compressing said bead, a shaped member presses against said bead, the shaped member having a profile

16. A carton as claimed in any of claims 11 to 15 wherein the diameter of the carton is substantially the same along its length.
17. A carton as claimed in any of claims 11 to 15 which also comprises closure means in the form of a sealing membrane for sealing the carton.
18. A carton as claimed in claim 17 wherein the upper surface of the sealing membrane and the portion of the side wall of the carton in the region of the rim and encased by said membrane define a cavity.
19. A carton as claimed in claim 18 which comprises a plug, the plug extending into the cavity defined by the sealing membrane and the rim thereby providing support to the rim.
20. A carton substantially as described herein with reference to Figs. 1, 2, 2A, 3, 3A and 4(a) to 4(d).